Compact Chart Recorder

KOBOLD

- 1-6 universal inputs
- Compact design
- Automatic chart winding
- Low-maintenance
  with 64 m roll of paper
- Simple installation
- Easy start-up

Model:
KLS

Description

The Kobold hybrid recorder of type KLS is used for reliable long-duration recording and monitoring of analogue signals. The multifunctional device is suited for universal use and is configurable. One to six-channel variants can be supplied.

The inputs are electrically isolated and are measured with a clock cycle of 125 ms/channel. All conventional analogue signals (standard signals, +/- voltages or currents, Pt 100, Pt 500, Pt 1000 or thermocouples) can be measured by means of universal inputs.

Thermocouples and 4-20 mA current signals are thus monitored for line break (open circuit).

If the unit is removed from the housing for panel mounting, the measuring circuits are not interrupted. Used paper can be easily removed online and automatically rewound. This facilitates especially the visual cyclical inspection and monitoring of your measurements.

The device is adjusted with keys on the front panel. The dialog is shown on the front display.

The display is a 2 x 16-segment LC display for dialog operation, read-out display and messages.

The popular option "Alphanumeric" rounds off the measurement and prints the following:

- Date and time of day
- Measuring point designation
- Installation position
- Instantaneous values
- Zoom area with unit
- Chart speed
- 12 adjustable message texts
- Limit violations
- Power-fail detection with printout

The recorder can also be equipped and delivered with the option "Digital inputs/outputs". This contains 4 control inputs, 4 relay outputs and one RS485 interface.

Suitable software is required for configuration with a PC.

The device can be protected against undesirable operation with a code or control input.

Applications

- Chemical-, industrial-, environmental-, climatic measurement technology
- Power supply
- Quality assurance
- Plant and equipment manufacturing
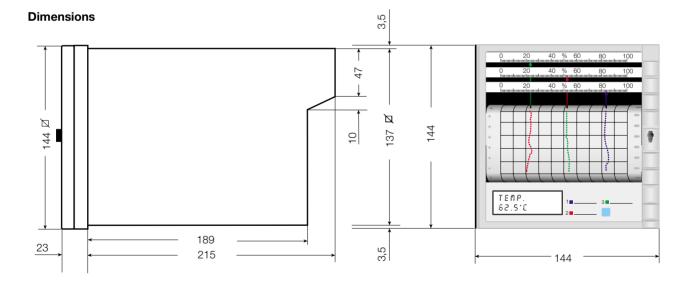- Laboratory applications

Technical Details

Input

Voltage:	max. 50 V 0-1 V, 0-10 V ±20/50/100/200 mV, ±1/2/5/10 V
Input resistor:	1 MOhm
Current:	max. 100mA; 0-20 mA; 4-20 mA (line break (open circuit) ≤ 2mA) ±400 µA; ±1/2/4/20/40 mA input resistor 50 ohm
Resistance thermometer:	Pt100; Pt500; Pt1000; Ni100 (two or three-wire connection) measuring current: approx. 1 mA
Thermocouples:	(DIN IEC 584) type: B/J/K/L/N/R/S/T or U
Basic accuracy:	±0.25 % of full scale value
Switch-on drift:	±0.2 % of full scale value
Temperature drift:	0.25 % / 10 K
Sampling cycle:	125 ms/channel
Resolution:	12 bit
Max. allowed potential difference:	DC 60V, AC 60 Vp (channel-channel)
Display:	2 x 16 position LCD
Recording system:	1 to 4 replaceable pens or chamber print head

Ink capacity under reference conditions:

Continuous line system:	approximately 600 m
Dot print head:	1 million dots/colour
Paper speed:	0, 5, 10, 20, 60, 120, 240, 300 and 600 mm/h; fixed, event or externally adjustable
Power supply:	90-253 VAC (50/60 Hz) or 18-30 V DC/AC (50/60 Hz)
Power:	max. 20 VA
Operating temperature:	0 to +50°C
Storage temperature:	-20 to +70°C
Rel. humidity:	10-75%
Housing:	stainless steel V2A, for panel mounting
Protection:	IP 54, front
Dimensions:	144 x 144 x 215 mm (HxWxD)
Weight:	approximately 4 kg

Technical Details

Digital inputs and outputs (option)

Inputs	4 control inputs logical "0": - 3 to +5 V logical "1": +12 to +30 V duration > 20 ms bounce time < 5 ms input resistance approx. 10 kOhm selectable functions: locking the front parameterization, functions with alphanumeric option: print date/time of day, instantaneous values, message text, feed switching, registering stop
Internal auxiliary voltage:	24 VDC, max. 25 mA
Relay outputs:	4 N/O contacts (programmable as N/C contact) max. 250 V, 3 A
Interface:	RS 485, rear line length max. 1000 m device address adjustable

Alphanumeric (option)

Real-time clock:	non battery-backed buffer with power failure minimum 50 hours automatic summer /normal time
Text printouts:	date and time of day, measuring point designation, device designation, instantaneous value, unit, zoom area, chart speed, 12 adjustable message texts (with 15 characters each), limit violations, feed switching, power-failure times (on/off)

Dimensions

Order Details (Example: KLS-1000)

Input	Model	Alphanumeric	Supply	Digital inputs /outputs
1-channel recorder	**KLS-1...**	**...0...**= without	**...0...**= 90...253 VAC	**...0...**= without
2-channel recorder	**KLS-2...**	**...1...**= Date, time of day	**...3...**= 18...30 VDC/AC	**...4...**= 4 relays, 4 control inputs
3-channel recorder	**KLS-3...**	and text block		and RS 485
4-channel recorder	**KLS-4...**			
6-channel recorder	**KLS-6...**			

KOBOLD

Example of Connections

Power

18...30 V DC
18...30 V AC
50/60 Hz

PE

90...253 V AC
50/60 Hz

PE
N
L

max.
250 V / 3 A

R_L

12...24 V DC
30 mA

>20 ms

>20 ms

>20 ms

RS 485

RXD / TXD A
RXD / TXD B

RXD / TXD A
RXD / TXD B

RXD / TXD A
RXD / TXD B

L / L+   N / L-   PE

41 42   51 52   61 62   71 72

+24V +24V   86 87 88 89

1: Shield
3: RXD / TXD B
5: GND via 100 Ω (int.)
7: GND
8: RXD / TXD A

RS 485

8: RXD / TXD A
3: RXD / TXD B
1: Shield

Rel.1   Rel.2   Rel.3   Rel.4

Option
"Digital I/O"

Ch. 1				Ch. 2				Ch. 3				Ch. 4				Ch. 5				Ch. 6			
111	112	113	114	211	212	213	214	311	312	313	314	411	412	413	414	511	512	513	514	611	612	613	614

Signal

+
−

0...20 mA, 4...20 mA
+/- 400 µA, +/- 1 mA, +/-2 mA, +/- 4 mA, +/- 20 mA, +/- 40 mA

+
−

+/- 20 mV, +/- 50 mV, +/- 100 mV, +/- 200 mV
0...1 V, 0...10 V, +/- 1 V, +/- 2 V, +/- 5 V, +/- 10 V

+
−

B (Pt30Rh-Pt6Rh):	0...+1820 °C	J (Fe-CuNi):	-210...+999.9 °C
K (NiCr-Ni):	-200...+1372 °C	L (Fe-CuNi):	-200...+900 °C
N (NiCrSi-NiSi):	-270...+1300 °C	R (Pt13Rh-Pt):	-50...+1800 °C
S (Pt10Rh-Pt):	0...+1800 °C	T (Cu-CuNi):	-270...+400 °C
U (Cu-CuNi):	-200...+600 °C		

Pt100:	-100...+600 °C
Pt100b:	-20...+120 °C
Pt100c:	-70...+170 °C
Pt500:	-100...+600 °C
Pt1000:	-100...+600 °C
Ni100:	-60...+180 °C

www.kobold.com